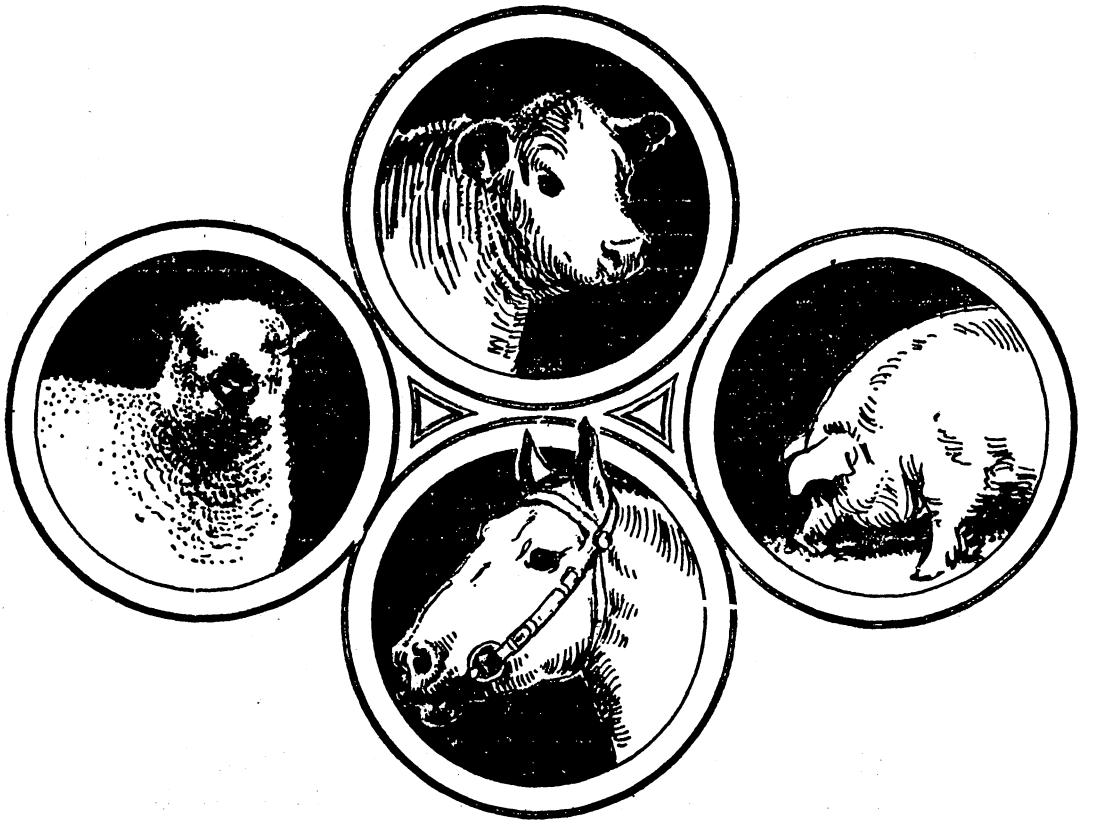
Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9
An528

LIBRARY
RECEIVED
★ APR 14 1930 ★
U. S. Department of Agriculture

The EXTENSION ANIMAL HUSBANDMAN



UNITED STATES DEPARTMENT
OF AGRICULTURE
WASHINGTON,
D.C.

Serial No. 17

March, 1930.

Let me but do my work from day to day
In field or forest, desk or loom,
In roaring market place, or tranquil
room.
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
This is my work, my blessing, not my
doom;
Of all who live I am the one by whom
This work can best be done in my own
way,
To suit my spirits and to prove my
powers;
Then shall I cheerful turn when the long
shadows fall
At eventide to play, and love and rest,
Because I know for me my work is best.

-Henry Van Dyke.

All communications regarding this publication, which is issued quarterly, should be addressed to:

C. D. Lowe,
Extension Animal Husbandman,
U. S. Department of Agriculture,
Washington, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C.

THE EXTENSION ANIMAL HUSBANDMAN

Issued by the Bureau of Animal Industry and the
Office of Cooperative Extension Work, Cooperating.

Serial Number 17 -- -- March, 1930.

Special Articles in this Issue:

Cooperation in Meat Research, by O. G. Hankins ..... Page 2

Marketing of Summer Range Lambs, by E. F. Rinehart ..... " 6

Swine Extension Demonstrations, by E. M. Regenbrecht ... " 9

Missouri Beef-Production Contest, 1929, by H. M. Garlock ..... " 15

Extension Teaching Methods, by Rex Beresford ..... " 17

Wisconsin Lamb-Production Contest, 1929, by James Lacey ..... " 20

Texas Feeding Demonstrations, by A. L. Smith ..... " 23

Also:

Summary of 1929 Ton-Litter Work by States ..... " 5

What's New in the States ..... " 12

North Dakota Lamb-Production Project Winners, 1929 ..... " 14

Four Years' Results of the Missouri Plan of Sheep Improvement ..... " 21

Abilities to Learn ..... " 22

Recent Publications ..... " 25

COOPERATION IN MEAT RESEARCH

by

O. G. Hankins, Bureau of Animal Industry

- - - - -

Animal husbandmen were among the first in our research institutions to appreciate the advantages of cooperative study in a large way and to undertake such work. More than 10 years ago, in 1919, the Bureau of Animal Industry in the U. S. Department of Agriculture and a group of State experiment stations joined hands in a cooperative study of a problem of widespread importance -- the soft-pork problem. Through the combined and coordinated efforts of the different institutions this work developed rapidly and yielded much information which was greatly needed. Rapid progress was made where very slow headway had resulted from the independent studies of the different institutions prior to 1919. When the scope of the problem broadened rather suddenly and materially with the increased importance of certain production factors, about eight years ago, the cooperators, due to the extensive facilities at their command and to the smooth functioning of the group as a unit, were able to meet the conditions. This project demonstrated unmistakably for the first time some of the possibilities in cooperative research on far reaching animal-husbandry problems.

It was in 1924 that the first important step was taken in cooperative meat research in a comprehensive sense. It was then that a study of the factors responsible for variations in the quality and palatability of meat was proposed by the National Live Stock and Meat Board and that plans for the inauguration of such a study were formulated by a committee representing the U. S. Department of Agriculture, the State experiment stations, and the Institute of American Meat Packers. In 1925 the cooperative project, "A Study of the Factors which Influence the Quality and Palatability of Meat," was adopted by a conference of State experiment station directors and U. S. Department of Agriculture officials as one of six national projects to be carried on with funds made available by the Purnell Act. With little delay the work was begun of developing methods for measuring variations in quality and palatability and of determining the effects of factors such as age, sex, breeding, and ration upon the different characteristics of the meat. It is well known that previously, with a few exceptions, including the soft-pork studies, research with meat animals had commonly been regarded as complete when the animals were marketed and selling price and dressing percentage had been recorded. With the inauguration of this national cooperative project, however, a new and much broader interest, purpose, and viewpoint were given to livestock experimentation. It made possible and encouraged the pursuit of meat animal study to the logical and ultimate conclusion,-- to the dining table.

From the beginning the project attracted the active interest of a large number of State experiment stations in addition to several bureaus in the U. S. Department of Agriculture. Approximately 25 States have devoted time and money to the work each year and the Bureaus of Animal Industry, Agricultural Economics, and Home Economics in the U. S. Department of Agriculture have done likewise. The work has been supported not only from funds made available by the Purnell Act but also from other funds to a very considerable extent. The latter applies to some of the States as well as to the department. Of course, Purnell money is not available to the Department of Agriculture. Furthermore, the project has been sponsored by the National Live Stock and Meat Board and that organization has spent some money each year on the traveling expenses of State station representatives who otherwise would have been unable to attend the annual conference of cooperators.

The annual conference is one of the foremost factors contributing to the success of the work. It is permanently organized, with a chairman, secretary, executive committee, and a number of subcommittees charged with responsibilities relating to methods and to specific lines of study. Detailed reports of work done are made to the conference by the different institutions and each subcommittee on the specific lines of study summarizes the reports falling within the scope of its responsibility and makes recommendations relative to publication and for the work to follow. There are subcommittees for beef projects to study the influence of (1) age, (2) sex, (3) breeding, (4) grass versus grain, (5) degree of finish, and (6) ration and management; for lamb projects, to study the influence of (1) ram versus wether, (2) breeding, and (3) ration and management; for pork projects, one subcommittee to handle all phases.

The foregoing outline of the conference organization suggests the concentration and coordination which have been brought into play. There is no hesitancy among the cooperators to duplicate work at different stations whenever it appears to be advantageous to do so. There is full realization that only in this way can the most rapid, economical, and satisfactory progress be made under many conditions. On the other hand, the conference makes it possible to avoid duplication when such avoidance is desirable.

Work with hogs and pork had not been emphasized up to the beginning of this year but has now become a very prominent phase of the project. This was accomplished through the expansion of the cooperative soft-pork project to a more inclusive study of all characteristics of pork and making it a part of the cooperative meat project. It is anticipated that several subcommittees

will now be required to handle the conference activities with reference to the different lines of pork work.

Reference has been made to other subcommittees organized to deal with the research methods. To a considerable extent adequate methods for measuring variations in the different characteristics of meat were not available when the work was begun in 1925. In fact there is still need for the development of new methods and the further refinement of some of those now in use. To handle effectively the innumerable problems related to the formulation of the most accurate methods, subcommittees were appointed early in the work to deal with the following: (1) feeding, (2) slaughtering and cutting, (3) grading animals and carcasses, (4) laboratory studies, and (5) cooking. Special subcommittees under (4) deal with tenderness and texture, histological technic, bound and free water, and color determination.

The U. S. Department of Agriculture has not only contributed in a large way to the type of cooperation discussed above but has worked with a large number of States in the performance of specific meat studies. While the Bureau of Animal Industry has taken the lead in the department in these studies, the Bureau of Agricultural Economics, and the Bureau of Home Economics have made very important contributions to the work,-- in the capacity of coleaders of the grading and cooking phases, respectively.

There are so many different but interrelated factors involved in meat and its production that any comprehensive meat study necessarily draws together with common purpose investigators who approach the problem from different viewpoints. These investigators include the production, nutrition, genetics, grading, histology, meat, and cooking specialists. Without this concerted attack, complete solution would be an impossibility.

With the new viewpoint or objective that has been given to livestock research there are countless questions calling for answer. Accurate decisions on the relative importance of these questions to the industry are required to direct the work in the most productive channels. Cooperation has aided immeasurably in reaching such decisions. Moreover, through the coordination of effort among the cooperators and the unity of methods, the study is moving forward efficiently, or with satisfactory rapidity and a minimum of expense. The Committee on Projects and Correlation of Research of the Association of Land-Grant Colleges, in its most recent report, referred to the meat project first among a very limited number of cooperative projects as especially outstanding in completeness of cooperative organization and effectiveness of operation. The public should benefit greatly from this modern method of research applied to a problem which touches everyone.

SUMMARY OF 1929 TON-LITTER WORK BY STATES

State	Litters weighing a ton or more at 180 days of age*	Average weight of ton litters	Average pigs in ton litters	Pigs in heaviest litter	Weigh of heaviest litter
	Number	Pounds	Number	Number	Pounds
Alabama	5	2,230	8	10	2,450
Colorado	6	2,554	11.6	16	3,089
Georgia	40	2,097	9.8	11	3,399
*Idaho	10	2,039	10.8	12	2,700
Illinois	33	2,310	10.5	12	3,216
Indiana	63	2,339	10.8	17	3,896
Kansas	8	2,175	9	11	2,430
Kentucky	63	2,372	10.4	11	3,223
*Louisiana	2	2,108	11.5	13	2,181
*Maryland	1	2,130	13	13	2,130
Massachusetts	3	2,884	12	11	3,085
Minnesota	61	2,553	10.8	14	3,700
Mississippi	2	2,274	10	10	2,548
Missouri	9	2,424	10.7	13	3,499
New York	1	2,510	11	11	2,510
North Carolina	3	2,387	11	13	2,745
North Dakota	20	2,402	10	12	3,048
Ohio	98	2,224	10.2	11	3,125
Pennsylvania	59	2,312	10.5	17	3,987
South Carolina	12	2,235	9.9	12	3,066
Tennessee	75	2,340	10.5	14	3,810
*Texas	5	-	8.4	10	2,250
Virginia	2	2,497	11.5	13	2,794
Washington	14	2,160	10	10	2,890
Wyoming	2	2,250	9	9	2,325

*Idaho, Louisiana, Maryland, and Texas reported on the basis of 150 days of age.

Ohio leads the procession this time with a total of 98 ton litters produced. Tennessee, with 75, is next. Indiana and Kentucky are tied for third with 63 each, closely followed by Minnesota with 61, and Pennsylvania with 59. A total of 597 litters from 25 States was reported as reaching the goal. This is an increase of 105 over the previous year.

MARKETING OF SUMMER RANGE LAMBS

by

E. F. Rinehart, Idaho Extension Service

- - -

The marketing of summer lambs is a project that was conducted in cooperation with the Idaho Wool Growers' Association over a five-year period from 1925 to 1929, inclusive.

For five years previously project work had been done on the management problems of range sheep, especially in those sections where early shed lambing is practiced. The demonstration work was mostly with the factors that affect the lambing percentages, growth, and weight of the lambs.

Shed lambing is practical in a part of the State only. Success is dependent on three factors: First, early grass; second, an abundance of winter feed, mostly alfalfa hay with some supplementary feed available; third, a fairly mild winter with plenty of sunshine. In the sections of Idaho where all those conditions exist, shed lambing is the general practice.

The system is popular and practical because in these regions the early grazing is on low range on the sage brush plains of the public domain, and the foothills below the forests. In the early part of the season this range feed is abundant and fresh. As the summer advances, the feed becomes dry and tough. Hence, shed lambing is practiced in order that fat lambs, rather than feeders, may be produced.

Operating expenses are greatly increased. These can be offset only by management systems that will insure a large lamb crop. Most records show that it is necessary to market a lamb crop of from 85 to 90 per cent to make the system profitable.

Good breeding and good feeding are necessary. In no other section is so much attention paid to obtaining good rams. The ewe is usually of a crossbred, range type -- either a large, rugged, smooth Rambouillet, or an outcross of longwool blood, carrying from one-half to seven-eights Rambouillet blood. Ninety per cent of the rams are registered Hampshires.

In these sections all lambs are shipped. Formerly they were sorted on the range and the "cut-backs" sent to the mountains with the

ewes, which has the advantage of putting more weight, size, and finish on the lambs and increasing the yearly return per ewe for that particular year. However, the demonstration results showed that the ewe nursing a lamb on the range all summer did not do so well the following year; hence it is deemed best to send all the larger lambs to market, holding back only a small per cent that are too young and small to do well as feeders.

In any range operation, weather and feed conditions naturally affect the results; consequently, one year's data are not typical. For this reason the data should apply to a number of years. The project was begun as a three-year project, but was extended to five years in order to determine variation due to uncontrollable factors.

The year 1925 was ideal during both the spring and summer.

The 1926 shipments were from the same ranges during a dry year.

In 1927 the winter conditions were good but the spring was late and cold, so that the milk supply of the ewes went down, (a majority of cases drying up altogether), so that most of the lambs had to make their own way. Summer conditions were good.

In 1928 the ranges were good, becoming dry as the summer advanced.

The year 1929 was the hard one of the five. The spring was late and cold. The stock was from four to six weeks late in getting out. The weather remained cold and the feed grew slowly. The summer was dry. Results of 1925 compared with those of 1929 show extreme conditions, the best and the hardest years of range operations during the period of study.

The summary of results is from the markets of Chicago, Omaha, St. Joseph, Kansas City, and Denver. The Idaho Wool Growers' Association has given the data of the sales. Compilation of averages and weights has been done in the Animal Husbandry extension office. All sales and weights are actual, being the compilation of almost 2,000 sales annually, the total being the actual sale weights and prices of more then 13,000 carloads of Idaho summer lambs. All weights and prices are those of the market. To get the home values, shipping and marketing expenses must be deducted.

Summary of Lambs by Years and Classes

	1925	1926	1927	1928	1929
Total number of lambs	540,753	557,939	689,176	673,256	698,704
Fat lambs	426,242	400,062	486,810	496,048	457,047
Feeder lambs	113,511	157,877	202,368	177,208	241,657
Per cent fat lambs	79.00	71.70	70.64	73.68	65.41
" " feeder lambs	21.00	28.30	29.36	26.32	34.59
Ave. weight per lamb	73.18	71.58	75.76	74.55	75.39
" " " fat lamb	74.95	74.78	79.60	77.54	79.51
" " " feeder lamb	64.22	63.48	66.46	66.10	67.59
Ave. price fat lambs per cwt.	$15.05	$14.75	$13.82	$15.54	$13.93
" " feeder " " "	14.52	13.45	12.74	13.30	12.74
Ave. price per head, fat lambs	$11.26	$11.03	$11.02	$12.06	$11.08
" " " " feeder "	9.33	8.54	8.47	8.79	8.61
Ave. price per lamb	$10.87	$10.32	$10.26	$11.20	$10.22

Race Horse Heaven

(Fair Play, sire of Man o' War,
is dead.--News item.)

Up in the rich green pastures,
Where all great horses go,
He's running now and racing
As in the long ago.

Winning the Flash and Mantauk,
The Lawrence, the Jerome--
Just a vague streak of chestnut,
Showing the best way home.

Then, when he's feeling lazy,
Grazing serenely glad,
Hearing his buddies whisper,
"That's Man o' War's great dad!"

--By H. I. Phillips.

SWINE EXTENSION DEMONSTRATIONS

by

E. M. Regenbrecht, Extension Swine Husbandman,
A. and M. College of Texas

- - -

There is a wide variation in the conditions existing on the various farms on which hogs are produced. Each farm has its own peculiar opportunities and handicaps, which must be met in different manners. Therefore, swine demonstrations can not be outlined according to any one plan.

In this paper some of the principles employed in demonstration work in Texas will be discussed.

Our principal object is to help the farmer make a profit out of the production of hogs. Better methods in themselves mean little to the farmer, unless they result in larger profits. We go out to set a farmer up in business on a sound basis, so that profits will be assured. We take conditions as we find them, and improve them step by step until that particular farmer has his hog production on a profitable basis. We are not much concerned about teaching better methods. What we are after is the execution. Mere teaching may educate, but does not necessarily reform.

The first step in conducting a swine demonstration is the selection of the demonstrator. A broadcast invitation to farmers may bring in successful demonstrators, but more often it does not. Too many never-do-well farmers respond to such invitations.

Real demonstrators grow as they proceed, and can seldom be hand-picked. The wealthy farmers with well-equipped farms occasionally make good demonstrators, but more often they do not. Those farmers who are most interested usually make the best demonstrators. Frequently they are cautious in the beginning and do not push forward, but their interest is always sincere and genuine. They are not working merely for publicity.

After the demonstrator has been selected, he starts with what he has and, step by step, makes improvements. These steps are taken as fast as he can master them, always keeping his hog production on

a paying basis. Rapid plunging, such as the investing of considerable sums of money in purebred stock or expensive equipment, is dangerous unless the hogs pay for these expenditures as they are made.

The production of feed precedes the production of hogs. This is the first step. The feeding of livestock belongs to the farmer who produces the feed. The successful production of feeder pigs is the second step. Proper and economical feeding is the third, and marketing is the fourth and last. The farmer must succeed at each in order to succeed in the undertaking as a whole. All details, such as water supply, feed troughs, shade, houses, sanitation, pastures, and many others, though seemingly small factors in the beginning, make a large contribution toward the final profit or loss.

In the beginning the equipment must necessarily be inexpensive. More expensive houses can replace improvised sheds, etc., as the hogs earn a profit. Better hogs (purebreds, if possible) should precede expensive houses. Hog pastures that furnish grazing at all possible seasons must be provided in the early part of the demonstration. The feed mixtures should be simple, and the feeding instructions easy to follow.

We keep a constant check on the progress of the demonstrator. Hogs on feed should be weighed at intervals and a record kept of the feed consumed. If the hogs are not making satisfactory gains we must find the reason, so that the error may be corrected.

The marketing is as important as the production. We must see the demonstrator through to a successful and profitable end. This may require the organization of a cooperative shipping association, or it may require home killing and curing. Whatever is required should be provided. We can not dodge the issue and be successful in demonstration work.

You may ask if this type of demonstration requires a lot of individual attention. It does, though some demonstrators require more than others.

A farmer is not a demonstrator, however, until he has demonstrated something. When the demonstration reaches the point that it is of interest to the neighboring farmers the results can be published in the county paper and a field meeting held at the farm. The demonstrator can tell his own story and the results should speak for themselves.

Results must be presented in a simple, comprehensible form. In many cases we have presented results in terms of profit per acre of feedstuffs grown on the farm and marketed through hogs. The average farmer is in the habit of thinking in terms of yields per acre and profits per acre, and he likes this method of presentation of the data.

We have used the pork-production contest as a means of stimulating interest in these demonstrations. The results have been very pleasing, and the demonstrations have had a tremendous influence on the swine production in our State.

Texas Pork-Production Contest * Results, 1929

Group I - Those Owning One Sow

Name	Junior or adult	No. of Pigs	Days required to make 225 lbs. ave. weight	Breed	Cost per pound of pork	Profit
Orth Yowell	Junior	8	139½	Purebred Poland China	$.0576	$ 77.02
Mrs. Maggie Shanks	Adult	10	139-3/4	Grade Duroc-Jersey	$.0703	45.33
J. K. Adams	Junior	7	140-3/4	Purebred Poland China	$.0608	77.79
Ed. Jones	Adult	10	147	Crossbred Duroc Poland	$.059	98.21
S. J. Payne	Adult	7	148	Purebred Duroc-Jersey	$.034	114.28

Average for all medal winners - 143 days.

Group II - Those Owning Two to Five Sows, Inclusive.

H. C. Gadberry	Adult	15	215.26 pounds in 155 days	Crossbred Poland Hampshire	$.0747	83.58
Ernest Webb	Adult	18	195.98 pounds in 154 days	Purebred Duroc-Jersey	$.0915	42.41

*See September, 1929, issue of this publication for rules of the contest.

WHAT'S NEW IN THE STATES

South Dakota

W. R. Hauser, former animal husbandry specialist and more recently assistant State club leader, resigned his position on January 1 to become an agricultural agent of the Milwaukee railroad, with headquarters at Chicago.

New York

H. A. Willman, formerly county agricultural agent in Adams County, Pa., has been appointed livestock extension specialist at Cornell University.

Alabama

R. S. Sugg, assistant animal husbandry specialist, has resigned his position to become county agricultural agent in Lee County, Ala.

Texas

Geo. W. Barnes, beef-cattle specialist, resigned his position on February 1 to accept an appointment with the Federal Farm Board as an organization expert in cooperative livestock marketing. He will retain headquarters at College Station. A. L. Smith, formerly a district agent, has been appointed to succeed Mr. Barnes on the extension staff.

Ohio

L. A. Kauffman, sheep specialist, will accompany D. S. Bell, sheep husbandman of the Ohio Experiment Station on a two-months' automobile tour of the West to study range livestock production, starting late in April.

Louisiana

The visual demonstration of a long-and a short-bodied shote on foot, was carried on to where one-half of each carcass hung side

by side with the other halves cut into hams, loins, bacons, shoulders, etc., made up one part of the 1929 State Farmers' Short Course.

Comparative Weights of the Cuts From the Two Carcasses

	Long Body	Short Body
Head	11.75 lbs.	8.50 lbs.
Leaf fat	1.50 "	4.10 "
Hams	19.50 "	14.00 "
Shoulders	21.00 "	16.00 "
Back or loins	20.00 "	15.75 "
Bacons	11.50 "	8.00 "
Ribs	2.00 "	2.00 "
Feet	3.00 "	1.50 "
Trimmings	8.00 "	15.25 "
Total	98.25 lbs.	84.10 lbs.
Length of loins	23 inches	18 inches

Comparison of Approximate Dressing Percentage of the Pork Cuts from the Two Carcasses

	Long Body	Short Body
Head	12.0%	10.0%
Leaf fat	1.5	4.1
Hams	20.0	16.6
Shoulders	21.2	19.0
Back or loins	20.2	18.7
Bacons	11.7	9.5
Ribs	2.0	2.3
Feet	3.0	1.8
Trimmings	8.4	18.0
Total	100.0	100.0

-- M. M. LaCroix

North Carolina

During 1929, eleven county agents assisted 45 farmers in keeping records of the feed consumed and the rate of gain made by 918 hogs.

These hogs weighed an average of 85 pounds each at the beginning of the feeding period, which averaged 83 days in length.

The average final weight of the hogs was 204 pounds, the gain per pig being 119 pounds which was made at an average rate of 1.43 pounds daily.

The prices at which they sold averaged $10.94 at the farm.

After paying the market price for all the other feed eaten by them, these hogs returned $1.50 a bushel for 6,852 bushels of corn which was charged to them at the current local market price which averaged $1.09 a bushel. Here we have an increase of 41 cents return per bushel for corn converted into pork as compared with selling it at the market price, but who can say what the increase in profit was?

Very likely some of this corn was produced at a cost of $0.70 a bushel, in which case the profit would be 39 cents as corn, and 80 cents as pork.

Doubtless some of the corn cost more than the market price of $1.09 a bushel to produce, in which case a loss was averted by feeding it.

Here is a fertile field for extension work, which the writer feels is not fully met by the very limited amount of work done in 11 of the 100 counties of the State, which was the case last year.

-- W. W. Shay.

NORTH DAKOTA LAMB-PRODUCTION PROJECT WINNERS - 1929

Name and address	Ewes	Lambs raised	Lamb weight per ewe (140 days)	Average weight lambs	Per cent lamb crop raised
			Lbs.	Lbs.	
Class I - 25 to 50 ewes					
P. B. Molitor, Brinsmade	36	59	152	92.77	164
Chas. Woods, Eckman	25	45	108.2	60.11	180
Leo Bergeron, Bottineau	46	55	97	81.25	119
Class II - 51 to 100 ewes					
Gust Tweten, Oberon	58	82	134.3	95.01	141
Carl Runner, Cleveland	100	131	116.07	88.6	131
Andrew Larson, Litchville	60	67	93	83.29	112
Class III - 101 or more					
Matthew Duffey, Esmond	115	168	130.67	89.45	146
L. A. Larson & Son, Pingree	122	142	93	80	116
J. A. Jacobson, Sharon	117	143	91	74.5	122

MISSOURI BEEF-PRODUCTION CONTEST, 1929

by

H. M. Garlock, Missouri Extension Service

- - -

The Missouri Beef Production Contest again proved to be a valuable means of directing attention to the State beef program and securing the cooperation of farmers in adopting the practices recommended. The results obtained by the entrants have demonstrated that calves raised on farms, fed grain while nursing, and marketed when from 8 to 10 months old, have produced a weight and quality of carcass that is in demand at the market, and returned a profit after paying for their feed and the keep of their dams.

The winner of the $200 first prize in the 1929 contest was C. C. Speck, of Grundy County, who was also winner of similar honors in 1928. Other winners were Henry Brayton, Monroe County, second price of $150; John A. Montgomery and Son, Stoddard County, third prize $100; Ora M. Stout, Putnam County, fourth prize of $100; and A. D. Davis, Platte County, fifth prize of $100. All these men were winners in the 1928 contest with the exception of Mr. Davis.

The contest was outlined in such a way as to reward the cattle raiser who was doing the best job of raising cattle under methods outlined and demonstrated in the beef herd project.

The cash prizes were offered by the Kansas City Chamber of Commerce, the Kansas City Stock Yards Company, and the beef breed associations. All prize money is to be applied to the purchase of registered bulls.

The prizes were awarded on the basis of rate of gain, quality, and finish as indicated by the dressing percentage secured from packers' killing sheets, economy of gain and general herd management.

From the standpoint of extension teaching, each contestant demonstrated the ability of cows to provide a market for rough feeds and the advantage of feeding grain to suckling calves. A brief survey of records kept by the 28 contestants shows that the calves in these herds, after paying for their feed, left from $50 to $88 a head for their dams' keep. Records on cow herds show

that about $24 a head was required to keep a cow on Missouri farms during 1929. This would indicate a return of $26 to $64 a cow to pay for labor, risk, and other expenses.

This contest and work done in connection with the beef-herd project are influencing methods of handling calves in Missouri. More men are feeding calves to be marketed at weaning or as yearlings and fewer men are selling their calves to feeders.

Summary of Operations of Missouri Beef-Cattle Raisers Winning the 1929 Beef-Production Contest

Name.....	C. C. Speck	Henry Brayton	John A. Montgomery & Son	Ora Stout	A. D. Davis
County	Grundy	Monroe	Stoddard	Putnam	Platte
Prize	First	Second	Third	Fourth	Fifth
Number calves	18	27	18	11	19
Final wt. (ave. lbs.)..	735	698	672	602	791
Days fed	176	170	174	163	197
Ave. daily gain (lbs.).	2.98	2.49	2.26	2.25	2.18
Corn (bu.)	15.8	23	24	13.1	38.3
Oats (bu.)	-	-	1.5	.5	4.76
Oil Meal (lbs.)	16.6	37	-	44.3	68.4
Cottonseed meal (lbs.).		44.4	60	-	-
Molasses feed (lbs.) ..	33.3	77.7	184	65	-
Hay (lbs.)	-	185	250	-	-
Feed cost per head	$15.38	$25.57	$29.33	$14.67	$38.66
Selling price (cwt.)...	$15.25	$15.40	$16.25	$14.90	$16.00
Value per head	$101.11	$98.37	$103.35	$83.34	$126.56
Dressing per cent	59.3	60.43	60.6	60.04	62.7

EXTENSION TEACHING METHODS

by

Rex Beresford, Iowa Extension Service

(Excerpt from paper presented at the 1929 meeting of the American Society of Animal Production)

- - -

My observation is that the average experimentalist sees his field of animal husbandry as a set of problems to be worked out. It is a perfectly permissible and probably a laudable undertaking for him to spend a year or 10 years or a lifetime if necessary in working out a single one of these and in probing into its furthest dark recesses.

After some 15 years of groping in the extension field, it is my conviction, however, that probably the greatest weakness of the extension man in the past has been his attempt to extend the findings of the research man in much the same way. That is, he has tackled unrelated problems rather than an affirmative program.

Experimental investigations presumably discover facts. Classroom teaching presents facts for facts' sake. Extension teaching must select the facts on which to build a program of action. You may embroider and decorate your facts as you will. You may embrace them as science, pure and undefiled, but unless they may be translated into a program of action that will satisfy needs or desires, overcome obstacles, remove discomforts or difficulties, your facts are disembodied spirits, so far as extension value is concerned.

Formulating a sound program for the advancement of an industry in any State is not always an easy thing to do. It may seem to take the extension man far afield from the things at the moment closest to the heart of his experimental coworkers. It may minimize some phase of experimental work and play up ideas almost untouched experimentally, but demonstrated as sound by results in the field. To illustrate; the fact that an experiment station may be chiefly concerned at the moment in discovering "farthest north" in the mineral requirements of pigs, does not mean that the extension man should spend all his time in promoting the use of mineral mixtures. There are at least two reasons why he should not. First, his business is to help the farmer see mineral mixtures in something

of their true proportion in the feeding end of his hog business. In fact, the entire feeding phase may be well overshadowed in an individual case by other difficulties of planning, breeding, or management. Secondly, the mixture manufacturer and salesmen probably will attend sufficiently to the promotion side of the matter.

More and more we are finding that animal husbandry extension work that gets results is based on sound planning of a live program that is headed somewhere. The success of such projects as the "Missouri Plan for Sheep Improvement" and of the "Nebraska Plan of Profitable Pork Production" are examples. There are dozens of other examples in other States and other lines that might be given.

Methods of getting action on the plan and general adoption of the practices proposed in it are, I suppose, the things the committee had in mind when they assigned this topic. In extension work, all sorts of minds must be dealt with in all stages of doubt, lack of information, distrust, antagonism, and receptivity. Once the mind is disposed of there is still the will or whatever the mainspring that causes action may be. For it is the action secured, the practice adopted, that now measures the success or failure of the extension man's work. Planning must take into consideration, not only the soundness of some particular point or practice as proved by the investigator, but the practicability of securing its adoption as well. A general change in an agricultural practice such as the widespread adoption of the clean pasture method of raising swine may have been sired by Investigation but its dam was Necessity. Incidentally it was probably pastured on demonstration and self-fed on publicity. Any project that works, must be founded on a real and fundamental need, however much we may depend on other points of appeal for putting it over.

Once the program is formulated, one of the first problems of the extension man in putting it over is that of getting attention. Publicity must be had. That does not mean necessarily a lot of publicity for himself, though that does little if any harm as a general thing, but publicity for his project. Newspapers are at the head of the publicity list. The radio can be of much help. More or less spectacular things like the Nebraska and Iowa swine-special trains that were visited by 193,000 folks in six weeks' time, can be of much help, partly because of their publicity value. With proper set-up, they get a tremendous amount of publicity of all kinds, and focus the talk and some of the thinking of the whole State on the problems to be handled and the plans presented. Folks

who can be reached in scarcely any other way come to such "doings" and while it is probably true that you can not get a college education from a brass band, it is surprising how many casual visitors or those who come from curiosity alone, become inoculated with ideas where potent virus has been carefully prepared. An enterprise such as a train or a fair or show exhibit, should be, of course, not an end but one means to the end of spreading knowledge of the plan and its purposes and methods.

Production contests, when well handled, may be made useful and valuable means of extension teaching. They enlist personal pride in achievement as well as money reward and both these are valuable incentives toward better methods. With us the carlot baby-beef-production contest and the pig-crop contest have brought out many splendid result demonstrations of the value of the plans and methods extension men have advocated. We have made much use of their records in publicity, on trains, and at fairs and shows, and in field days on the contestants' farms. Probably 90 per cent of our farmers are much more willing to accept as practical and sound the methods used by the contestants than they are to take the same suggestion directly from the experiment station. So far those who have stood high in our contests have given the experiment station and extension service credit for help in gaining their success. This works both ways. It adds value to a method or practice in the eyes of many who would pay little attention to the same suggestion coming direct from the experiment station. It is a testimonial to the value of the experimental work that has pointed the way. This often results in new customers. The great trouble with contests in our experience has been the comparatively small number who can be induced to go into them. This matter of pride sometimes works the wrong way; that is, men are afraid to go in for fear they will not show up well.

The most effective method of extension teaching is the one that starts the farmer at the job of intelligent study of his own problems and at the same time affords him some help at critical times as he goes along.

Briefly, my idea of effective extension teaching starts with a well-balanced program for each branch of livestock production, presented through publicity, demonstrations, meetings, trains, shows, contests, cooperative tests, any other method you may devise, and more publicity.

Nothing great was ever achieved without enthusiasm. -- Emerson.

WISCONSIN LAMB-PRODUCTION CONTEST-1929

by

James Lacey, Wisconsin Extension Service

- - -

Our lamb-production contest rules called for 3 classes of entries—one for breeders with 15 to 25 ewes, a second class for breeders with 26 to 50 ewes, and a third for breeders with 51 to 100 ewes, also a fourth class for breeders with 100 ewes and over. We had only one entry in class 4 and that entry did not complete the year. We had only one entry in class 3 that completed the year's record.

In this contest we made suggestions in regard to feed and care. We did not, however, limit breeders to any particular method of management. We are compiling the records of feed costs in cooperation with the Department of Economics and will have these available for extension work at our meetings. The Wisconsin Live Stock Breeders' Association cooperated in the development of these contests to the extent of furnishing cash prizes for the winners. There will be no material changes made in the contest rules for 1930.

Final Placings

Name	County	Ewes	Lambs weighed	Lambs per ewe	Average weight of lamb per ewe
				Per cent	Pounds
		Class I			
Mrs. Genevive Shidler	Clark	24	41	1.70	123.8
Albert Forney	Marinette	15	28	1.86	117.1
William Neuman	Green Lake	21	28	1.33	107.0
John Taylor	Walworth	15	21	1.40	102.8
Paul Feiler	Pierce	21	27	1.28	90.0
		Class II			
Harley Earl	Walworth	30	46	1.53	124.7
Clarence Potter	Walworth	39	54	1.38	124.6
Geo. McKerrow & Son	Waukesha	39	54	1.38	119.6
Ross Ells	Walworth	27	42	1.55	100.0
Ed Copet	Clark	42	55	1.30	92.0
W. G. Burkhardt	Marinette	47	57	1.21	90.4
Geo. McKerrow	Waukesha	59	77	1.31	87.5
D. P. McDowell	Marquette	40	45	1.12	78.5
		Class III			
H. E. Creswell	Pierce	84	113	1.34	98.0

FOUR YEARS' RESULTS OF THE MISSOURI PLAN OF SHEEP IMPROVEMENT

Year	Farms adopting sheep management practices	Pure-bred rams sold at auction	Total no. purebred rams placed	Sheep treated for stomach worms	Lambs docked & castrated	Lambs creep-fed grain	Fat lamb shows	Lambs sold on graded basis
1926	349	33	158	15,434	8,107	4,475	1	460
1927	400	180	304	28,500	21,380	8,310	6	1,454
1928	2,290	225	527	68,255	59,880	17,910	10	7,880
1929	4,098	335	673	70,287	132,779	42,647	-	12,155

New Uses for an Old Art

With the twentieth century conditions have changed. Society's life has become still more complex. We have found that the eye-appeal, through writing and print, is not sufficient for getting our work done. It is still true that close and intimate understanding of a matter comes to most men through listening, not through reading. In spite of the ever-cheapening printed page, much of our information still needs to be distributed by word of mouth. Beyond question, where the feelings and wills of a large number of people are concerned, the most human and most effective approach is through speech."

—From HOW TO TALK, By Clapp and Kane.

"A man is like a tack...useful if he has a good head and is pointed in the right direction...but even though he is driven, he can only go as far as his head will let him."

—The Kodak Magazine.

Bah!

"Have you heard the sheep song?
What is it, 'Wool You Be Mine?'
No, No, 'All I Want Is Ewe.'"

ABILITIES TO LEARN

One valuable outcome of the experiments which have led up to a new theory of adult learning is the discovery that up to the age of 45 there is practically no subject which the average man or woman of intelligence can not master if he will.

* * * * *

Reports from a group of persons who answered a series of questions developed these interesting facts: that practically anything is learnable up to 50, that there is slightly more difficulty in learning from 40 on than from 30 to 39, except in the acquisition of food habits; that the difficulty from 30 to 40 is no greater than for childhood or adolescent years in the case of intellectual acquisitions pure and simple, and that, in general age influences the power of intellectual acquisitions very much less than it influences motor skill. We discovered, also that the difficulty of learning at late ages is due in part to ridicule, adverse comment, and undesired attention.

* * * * *

The difficulty with many people who were mentally quick and learned easily when they were in their teens is that they expect their minds to work just as fast when they take up some new subject of study at 35 or 40. And of course they do not--at first. But the reason is not that their mentality is impaired. It is simply that they have interrupted the habit of study for so long a time that they have to build up a new habit, and sometimes it is a slow process. The middle-aged man or woman resuming study after several years of mental inertia will find that each day he applies himself the task grows easier, and some day he may find himself competing with youngsters on their own terms. At Teachers College, Columbia University, we once had as students at the same time a father about 60 years old, and his two sons. The sons were extremely able students, but the father, as I remember it, got a little better grades than they did.

* * * * *

I do not mean that a man or woman in middle life can overnight make himself efficient in a vocation for which he has had no training, or that he will attack a course of study with all the vigor of an adolescent boy or girl. But he can get back his old-time facility if he will, and that is what is important for him to be assured of.

--Edward L. Thorndike in interview with May Carroll.

TEXAS FEEDING DEMONSTRATIONS

by

A. L. Smith, Extension Animal Husbandman

- - -

A recent survey reported by 50 county agents in Texas showed that more than 210 farmers were feeding out 40,808 head of cattle, consisting for the most part of calves and yearling steers. Demonstrations conducted in the previous year convinced many farmers that marketing their home-grown feeds through livestock is a practical method of selling their feed crops, more particularly grain sorghums. The organization of the Texas feeder-breeder association no doubt has stimulated interest along this line.

One of the outstanding demonstrations conducted in 1928 and 1929 was that of D. H. Perry of Nueces County, Tex., assisted by F. W. Hoepfner, county agent. He purchased 106 head of grade Hereford calves and followed them in the feed lot with a like number of hogs, and was able thus to sell his bundle dwarf milo maize for more than $50 an acre. These calves were grazed on a second-crop hegari field of 17 acres for a month before being put in the feed lot, and were gradually forced to ground maize bundles weighing on an average of 8 pounds, (with 5 pounds of head and 3 pounds of fodder per bundle). The feeding period lasted 140 days, the calves being marketed in March, making an average daily gain of 2 pounds a day per head. The hogs were allowed access to an adjoining barley field and given corn supplement during the last 10 days, making very satisfactory gains. The following summary gives results of demonstrations:

	Per head
Initial cost of 106 head of calves	$42.00
Value of 17 acres hegari, $10 an acre	1.60
2600 pounds ground maize bundles of 8 pounds each, 5 cents a bundle	16.25
Value of 2 pounds a day of cottonseed meal	6.50
Labor cost grinding maize and feeding	3.00
Interest on money invested in cattle	1.12
Total expense on cattle	$70.47
Value of 106 head of hogs at the beginning of the feeding period	5.20
Interest on money invested in hogs	.10
Cost of corn for finishing hogs, 10 days	1.00
Total expense on one calf and one hog	$76.77

Brought forward	$76.77
Average net selling price of 106 calves at market	71.54
Average net selling price on 106 hogs	20.18
Total return on one calf and one hog	$91.72
Less total expense on one calf and one hog.....	76.77
Total net profit on one hog and one calf	$14.95

Comparing results and revenue per one calf and one hog to feed produced per acre, the following analysis is presented to show the per acre revenue in the test:

Results show that 325 bundles of 8-pound maize supported one calf and one hog. On a basis of 800 bundles of maize per acre, an acre of maize fed two and one-half calves and two and one-half hogs.

While the test shows a heavy following with hogs, they made splendid gains.

Credit for 800 bundles or one acre yield of maize @ 5 cents -		$40.00
Profit on two and one-half calves and two and one-half hogs as per above		37.37
Total revenue per acre of maize marketed through cattle and hogs		$77.37
Less expense of producing acre of maize as follows:	Per acre	
Expense of feed, cultivating and harvesting	$6.00	
Depreciation on implements	1.00	
Upkeep expense, farm improvements	1.00	
Interest on money invested in implements	1.25	
Interest on money used in farm operations	.30	
Owners' expense rate of $1,200 per year, basis of 250 acres	4.80	
Interest on land $150 at 6 per cent	9.00	
Taxes	1.25	
Total expense producing one acre feed		$24.60
Net revenue per acre of maize marketed through cattle and hogs		$52.77
Less market value of maize		40.00
Difference in favor of marketing maize through cattle and hogs		$12.77

The calves consumed an average of 7 pounds of fodder and 12½ pounds of heads a day and were fed 2 pounds of cottonseed meal a day as a supplement to the ration.

Mr. Perry believed so strongly in the results he received year before last that he is repeating a demonstration similar to that of last fall, and now has 300 head of yearling and 2-year-old Hereford steers on feed. His experience also influenced 10 other farmers, who planted a crop of 2,000 acres of milo and hegari, and these men are now feeding out some 2,200 head of cattle on their farms. Mr. Perry is feeding older cattle this year, but their progress in the feed lot indicates that they, too, will utilize home grown feed at a handsome profit.

RECENT PUBLICATIONS

"The Relative Value of High-Grade and Low-Grade Calves Marketed as Two-year-old Steers," by E. A. Livesay - West Virginia Experiment Station Bulletin No. 225.

"Rout the Swine Roundworm," by Lacey and Bohstedt -- Wisconsin Extension Service Circular No. 234.

"Swine Feeding Experiments with Fall Pigs," by W. L. Robison -- Ohio Experiment Station Special Circular No. 17.

"Soybeans and Soybean Oilmeal in Swine Rations," by L. A. Weaver -- Missouri Experiment Station Bulletin No. 266.

"Domestic Slaughtering, Cutting and Curing of Pork," by Harry H. Smith-- Utah Experiment Station Circular No. 80.

"Lamb Feeding Experiments," by D. S. Bell --Ohio Experiment Station Special Circular No. 16.

"The Sheep Stomach Worm," by Lamson and Schulze -- Storrs (Conn.) Experiment Station Bulletin No. 157.

OUR LIVESTOCK DISEASE SITUATION

The status of livestock diseases in this country and means of reducing losses from them are discussed in a recent statement by Dr. John R. Mohler, Chief of the Bureau of Animal Industry, U. S. Department of Agriculture. Copies of the statement, which is in mimeographed form, are available.